

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL SEARCH REPORT**  
(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>PAT2786W-90</b>	<b>FOR FURTHER ACTION</b>	see Form PCT/ISA/220 as well as, where applicable, item 5 below
International application No. <b>PCT/CA2005/000323</b>	International filing date ( <i>day/month/year</i> ) 02 March 2005 (02-03-2005)	(Earliest) Priority date ( <i>day/month/year</i> ) 02 March 2004 (02-03-2004)
Applicant <b>MCGILL UNIVERSITY ET AL</b>		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 5 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☒ Certain claims were found unsearchable (see Box No. II).

3. ☐ Unity of invention is lacking (see Box No. III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows :

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ as selected by this authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of the first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons :

1. ☒ Claim Nos. : 1-5

because they relate to subject matter not required to be searched by this Authority, namely :

Claims 1-5 are methods of medical treatment. (Rule 39.1(iv) PCT)

Although claims 1-3 are directed to methods of medical treatment of the human/animal body, the search has been carried out based on the alleged effects of fenretinide and derivatives/analogues and ceramide and derivatives/analogues on pro-inflammation, inflammatory response and proliferation and respiratory tract infection.

2. ☒ Claim Nos. : 1-5

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically :

Present claims 1-5 relate to a method to treat inflammation with a compound that increases ceramide levels in the cell. The claims cover an extremely large number of possible compounds, including currently undiscovered compounds. As such, the extremely large number of options of compounds renders the claims unclear and not concise within the meaning of Article 6 PCT that a meaningful search is not possible. Consequently, the search has been carried out for only a limited number of compounds which are disclosed in the disclosure, namely fenretinide and derivatives/analogues thereof and ceramide and derivatives/analogues thereof.

3. ☐ Claim Nos. :

because they are dependant claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows :

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claim Nos. :
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim Nos. :

**Remark on Protest** ☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CA2005/000323**A. CLASSIFICATION OF SUBJECT MATTER**IPC<sup>7</sup> A61K 31/167 A61P 29/00 A61P 11/00 A61P 31/00

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC<sup>7</sup> A61K 31/167 A61P 29/00 A61P 11/00 A61P 31/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)

Canadian Patent Database Delphion ESP@CENET NCBI (PubMed)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No(s).
X Y	CA 2 365 290 A1 (LANG ET AL.) 08 September 2000 see whole document	1-2 and 4-5 3
X Y	WO 01/72701 A1 (ALI ET AL.) 04 October 2001 see whole document	1-2 and 4-5 3
X	CHAN ET AL.: "Ceramide path in human lung cell death" AM. J. RESPIR. CELL MOL. BIOL., vol. 22, April 2000, American Thoracic Society, pages 460-468. see whole document	3
X	WO 00/00207 A1 (MAURER ET AL.) 06 January 2000 see whole document	3

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents :	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

07 April 2005 (07-04-2005)

Date of mailing of the international search report

06 June 2005 (06.06.2005)

Name and mailing address of the ISA/CA  
Canadian Intellectual Property Office  
Place du Portage I, C114 - 1st Floor, Box PCT  
50 Victoria Street  
Gatineau, Quebec K1A 0C9  
Facsimile No.: 001(819)953-2476

Authorized officer

Tania Nish (819) 934-3592

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CA2005/000323

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No(s).
✓ X	ERDREICH-EPSTEIN ET AL.: "Ceramide signaling in fenretinide-induced endothelial cell apoptosis" J. BIOL. CHEM., vol. 277, December 20, 2002, ASBMB, pages 49531-49537. see whole document	3
✓ X	MAURER ET AL.: "Increase of ceramide and induction of mixed apoptosis/necrosis by <i>N</i> -(4-hydroxyphenyl)-retinamide in neuroblastoma cell lines" JNCI, vol. 91, July 7, 1999, Oxford University Press, pages 1138-1146. see whole document	3
✓ P,X	WO 2004/064823 A1 (PERRIE ET AL.) 05 August 2004 see whole document	1-5

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.  
**PCT/CA2005/000323**

Patent Document Cited In Search Report	Publication Date	Patent Family Member(s)	Publication Date
CA2365290	08-09-2000	AU3161300 A	21-09-2000
		CA2365290 A1	08-09-2000
		DE19909115 A1	07-09-2000
		EP1156854 A2	28-11-2001
		WO0051578 A2	08-09-2000
WO0172701	04-10-2001	AU5518901 A	08-10-2001
		CA2402769 A1	04-10-2001
		EP1268414 A1	02-01-2003
		JP2003528851 T	30-09-2003
		WO0172701 A1	04-10-2001
WO0000207	08-01-2000	AU1356201 A	09-07-2001
		AU4724599 A	17-01-2000
		BR9912501 A	02-05-2001
		CA2335941 A1	08-01-2000
		CN1308538 A	15-08-2001
		EP1091745 A1	18-04-2001
		EP1239851 A1	18-09-2002
		JP2002519329 T	02-07-2002
		US6352844 B1	05-03-2002
		US6368831 B1	09-04-2002
		WO0000207 A1	06-01-2000
		WO0147513 A1	05-07-2001
WO20040644823	05-08-2004	N/A	